



## **Guidance for Creating a Bacteriological Sample Site Plan Under the Revised Total Coliform Rule (RTCR)**

The Revised Total Coliform Rule (RTCR) entered into force in Utah on April 1, 2016. One of the requirements for all public water systems is to revise the sample site plan; required under the Total Coliform Rule (TCR). The purpose of the written sample site plan is to ensure the collection of samples from points in the distribution system that best represent the quality of water served to customers, to identify repeat sampling locations, and to establish the sampling schedule.

Once developed, the plan must undergo regular updates. It is to be available for review by representatives from the Division. Upon request, the water system must submit their plan to the Division.

What to include in the plan:

1. The plan should include basic information about the water system. Including but not limited to:

- The water system name
- PWSID# (UTAHXXXXX)
- Estimated population served\*
- Number of required samples per compliance period
- Dates of generation and updates to the plan
- Dates of operation (seasonal systems)
- The name and contact information for the person responsible for maintaining the sampling plan.

*\*The estimated population should match the number published in WaterLink ([www.waterlink.utah.gov](http://www.waterlink.utah.gov)). If you question your system's WaterLink information, contact Utah DDW (801) 536-4200.*

2. The plan must include a map of the distribution system. Exceptions are small systems such as restaurants, schools, office buildings, and some small industries.

3. The map should show locations of all distribution lines, sources, treatment, storage tanks and sampling sites. Identify each sampling site by street address and a numeric code. Give a brief description of the site. For example, outside tap house at 201 Main Street, Site #1. The sampling site Numeric Code should begin with the number 1 and then in numeric order. Use the Numeric Code, along with facility ID DS001, when submitting samples to the laboratory.

4. Locate sample sites so that they represent all areas of the distribution system. You may wish to include comments on your plan showing the reason(s) for selecting each site. Such as population density, industrial areas, pressure zones, areas vulnerable to potential contamination, dead-end lines, and purchased source entry points. Do NOT use the raw water tap at the sources as sampling sites for routine or repeat coliform samples. These are "triggered source" sampling locations under the Groundwater Rule (GWR).

5. The population served determines the number of routine coliform samples collected per month. As defined in the "Monitoring and Water Quality: Distribution System Monitoring Requirements" section R309-210-5.

- a) Water Systems required to collect one (1) microbiological sample per month:

If possible, identify at least five (5) sampling sites, each sampled at least once every three (3) months. In the event of a total coliform-positive sample, this system would return to collecting one (1) routine sample during the month following the positive sample.

b) Water Systems required to collect two (2) to forty (40) microbiological samples per month:

The number of sampling sites must equal two (2) times the number of required monthly samples. Each sampling site must have a sample taken at least once every other month. In the event of a total coliform-positive sample, these systems would return to collecting the usual number of routine samples the following month.

For example, a water system scheduled to collect four (4) samples per month, should identify eight (8) sample locations. Each month the system is sampling at half of the sample locations.

c) Water Systems required to sample more than forty (40) microbiological samples per month:

The number of sampling sites should equal two (2) times the number of required monthly samples. The sampling sites must represent the distribution system. If not, the number of sampling sites should increase to ensure sampling in all areas of the distribution system. Regardless of the number of sites, each site must be sampled at least once every three (3) months. Systems with large distribution systems and/or multiple pressure zones may have different sampling locations and rotations based on how to best test their system.

For example, a system scheduled to collect fifty (50) samples per month, should identify 150 sample locations. Each month the system is sampling a third of the sample locations.

Testing all sample locations occurs at the end of a three (3) months sample cycle. The process would then start over.

If your sample plan deviates from this, for example substituting frequency rather than many sample locations, contact DDW to ensure compliance.

6. Include in your sampling site plan instructions for Repeat sampling of your system.

You must collect Repeat samples from the following locations:

- The tap where the original positive coliform sample was taken,
- A tap within five (5) service connections upstream, and
- a tap within five (5) service connections downstream.

For systems with only one (1) or two (2) service connections (suitable sampling taps), collect all three (3) repeat samples in one (1) day from the limited number of sampling taps. The sample site plan should show which tap(s) are in use for multiple samples.

When there is evidence of a pathway for distribution system contamination systems may propose alternative repeat locations to DDW. A system may choose to specify alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis as Standard Operating Procedure (SOP) in its sample site plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on the specific situation.

7. Include in your sample site plan a schedule for collection of the samples. The collection of samples should happen at regular time intervals throughout the month. Systems using only groundwater and serving less than 4,900 people [five (5) samples required per month or fewer] may collect all required samples on a single day if taken at different sites.